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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,321

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Alun Pryce James

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12/02/2009

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EXAMINER

O HERN, BRENT T

ART UNIT

PAPER NUMBER

1794

NOTIFICATION DATE

DELIVERY MODE

12/02/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/584,321	<b>Applicant(s)</b> JAMES ET AL.	
	<b>Examiner</b> Brent T. O'Hern	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |



## **DETAILED ACTION**

### ***Claims***

1. Claims 1-12 are pending with claims 11-12 new.

## **WITHDRAWN OBJECTIONS/REJECTIONS**

2. All objections/rejections of record in the Office action mailed 6/12/2009 have been withdrawn due to Applicant's amendments in the Paper filed 9/14/2009.

## **NEW REJECTIONS**

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 103***

4. Claims 1-4, 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422).

Regarding claims 1-2, 4 and 11-12, Heikonen ('242) teaches a process for the disinfection and/or preservation of harvested plant material (*See Abstract, p. 3, ll. 27-49, p. 4, l. 40 to p. 7, l. 41 and claims 1 and 6.*), the process comprising contacting the harvested plant material with a liquid composition comprising at least one peroxygen compound (*See Abstract and claim 1, hydrogen peroxide.*) and at least one preservative (*See Abstract, p. 3, ll. 27-49, p. 4, l. 40 to p. 7, l. 41, formic acid.*), wherein the harvested plant material is animal feed selected from the group of harvested grass, cereals and maize (*See Abstract and p. 7, ll. 37-41.*) and wherein the preservative comprises formic acid, an organic acid (*See Abstract, p. 3, ll. 27-49, p. 4, l. 40 to p. 7, l. 41 and claims 1 and 6.*), however, fails to expressly disclose wherein the preservative comprises at least



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one of an organic acid having at least two carbon atoms such as acetic acid, octanoic acid, benzoic acid, parahydroxybenzoic acid, sorbic acid, ascorbic acid, citric acid, lactic acid, malic acid, propionic acid, succinic acid, their salts, and mixtures thereof and an organic acid salt having at least two carbon atoms or wherein the organic acid and organic acid salt have at least three carbon atoms and up to 20 carbon atoms.

However, Hei ('422) teaches treating a harvested plant material with a preservative comprising an organic acid having at least two/ (three) and up to 20 carbon atoms such as acetic acid, octanoic acid, succinic acid as alternatives to formic acid (*See paras. 22, 24, 35 and 111-112.*) for the purpose of providing harvested plant material with the desired microbial protection.

Therefore, it would have been obvious to alternatively use one of the above organic acids as taught by Hei ('422) instead of the formic acid in Heikonen ('242) in order to provide a harvested plant material having the desired microbial protection.

Regarding claim 3, Heikonen ('242) teaches wherein the peroxygen compound is hydrogen peroxide (*See Abstract and claims 1 and 6.*).

Regarding claim 8, Heikonen ('242) teaches wherein the liquid composition is used in an amount of from 0.5 to 10 liters per ton of plant material (*See col. 6, l. 50 to col. 7, l. 41 where the amount is 5 liters per ton.*).

Regarding claim 10, Heikonen ('242) teaches wherein the liquid composition has a pH of from 1 to 7 (*See p. 6, l. 35 and claim 2 where the pH of the fresh, newly harvested fodder is 4.5 or less.*).



5. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422) and Rossmore (Ch. 11.5, pl. 320, Handbook of Biocide Preservative Use, Springer, 1995.).

Heikonen ('242) and Hei ('422) teach the method discussed above, however, fail to expressly disclose wherein the liquid composition comprises from 5 to 60 % wt of the peroxygen compound and from 5 to 25 % wt of the preservative and wherein the liquid composition is an aqueous solution comprising from 0.5 to 40 % wt of peracetic acid, from 0.1 to 30 % wt of hydrogen peroxide and from 1 to 60 % wt of acetic acid.

However, it would have been obvious in view of Rossmore that an aqueous mixture of acetic acid and hydrogen peroxide will produce peracetic acid, where such equilibrium of acetic acid, hydrogen peroxide, peracetic acid (4.5% or 15%), and water are commonly known disinfectants used in the food industry (*See p. 320.*).

Regarding the wt% claimed, the Examiner points out that it is known in the art that disinfecting solutions containing 4-5% or 15% peracetic acid, about 85-96% of the remaining solution will be comprised of acetic acid, hydrogen peroxide and water.

Therefore, the Examiner takes the position that solutions of peracetic acid, hydrogen peroxide, and acetic acid present in the wt% ranges as claimed by the Applicant are known in the art of food grade disinfectants as taught by Rossmore.

Therefore, it would have been obvious at the time of Applicant's invention to one having ordinary skill in the art to modify the liquid composition as disclosed by Heikonen ('242) to include acetic acid and thus peracetic acid by reaction with hydrogen peroxide, because Heikonen ('242) and Hei ('422) teach that this substitution of one known



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organic acid for another that such microbial solutions are oxidizing solutions that rapidly disinfect, where Rossmore and Hei ('422) teach peracetic acid, acetic acid, peroxide disinfecting solutions are known in the art as commercially available solutions and are safe for food applications and typically contain concentrations of each agent in a wt % range that meets the limitations as claimed.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422), Rossmore (Ch. 11.5, pl. 320, Handbook of Biocide Preservative Use, Springer, 1995.), Doyle et al. (WO 99/44444) and Sembo et al. (US 2001/0044470).

Heikonen (242), Hei ('422) and Rossmore teach the process discussed above and Heikonen ('242) teaches wherein the peroxygen compound is hydrogen peroxide (*See Abstract and claim 1.*), however, fail to expressly disclose wherein the preservative is sodium benzoate.

Doyle ('444) teaches by using sodium benzoate and hydrogen peroxide for the purpose of reducing the number of bacteria in food (*See p. 3, ll. 9-26 and Abstract.*).

Sembo ('470) teaches using sodium benzoate to prevent the degradation of animal feed (*See para. 14.*).

Therefore, it would have been obvious to use sodium benzoate as taught by Doyle ('444) and Sembo ('470) in Heikonen (242) in order to reduce the number of bacteria in food and reduce the degradation of animal feed.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heikonen (EP 0 335 242) in view of Hei et al. (US 2002/0168422) and Nakanish (US 3,784,699).



Heikonen (242) and Hei ('422) teach the process discussed above, however, fail to expressly disclose wherein the liquid composition is used in an amount of from 1 to 3 liters per ton of plant material.

As discussed above, Heikonen ('242) teaches the liquid composition being applied in an amount of 5 liters per ton of plant material (*See col. 6, l. 50 to col. 7, l. 41.*). However, the Examiner takes the position that the level and completeness of disinfection of the food material will depend both on the type of plant material and the liquid composition, concentration and the pH of the chemical agents, in the liquid solution and further the dilution of the concentrated liquid solution used.

Nakanish ('699) teaches the addition of benzoic acid and its salts in combination with other disinfectants or preservatives such as sorbic acid, acetic acid and its derivatives, and hydrogen peroxide (*See col. 1, ll. 22-26 and col. 2, ll. 54-71.*) and that when an antimicrobial agent is added to food (*See col. 2, ll. 21-41.*), it must have low toxicity to humans and/or animals and should have no adverse effect upon the flavor of the foods at the levels at which they are employed (*See col. 1, ll. 60-64.*).

Therefore, it would have been obvious at the time of Applicant's invention to modify the process of Heikonen ('242) by adjusting the amount of the liquid composition used to treat the plant material because the addition of such agents to food for human or animal consumption must be in an amount that has no adverse effect upon the flavor of the foods and present little to no toxicity, and thus the level of the ordinary skill to modify such parameters to find the optimal range amount of the solution that will



achieve maximal disinfection with minimal waste of the agents while simultaneously preserving the food quality and safety for consumption (*See also MPEP 2144.05.*).

### **ANSWERS TO APPLICANT'S ARGUMENTS**

**8.** In response to Applicant's arguments (*See pp. 6-9 of Applicant's Paper filed 9/14/2009*) regarding Wright ('294) and Glabau ('294), it is noted that said references are no longer cited, thus, said arguments are moot. The new limitations are discussed above.

**9.** In response to Applicant's arguments (*See pp. 6-7 of Applicant's Paper filed 9/14/2009*) regarding Doyle ('444) as a primary reference, it is noted that Doyle ('444) is no longer cited as a primary reference, thus, all arguments regarding such are moot.

**10.** In response to Applicant's arguments (*See pp. 6-7 of Applicant's Paper filed 9/14/2009*) that Doyle ('444) is only used for food for humans and not animals, it is noted that Doyle ('444) now is only cited for teaching sodium benzoate in combination with newly cited Sembo ('470) which specifically teaches using sodium benzoate to prevent the degradation of animal feed (*See para. 14.*). Thus, sodium benzoate is usable for animal feed.

**11.** In response to Applicant's arguments (*See pp. 6-7 of Applicant's Paper filed 9/14/2009*) that Bo just teaches using formic acid and not longer chain acids, it is noted as discussed above that newly cited Hei ('422) reference teaches using the longer organic acids as alternatives to formic acid.

**12.** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP



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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent T. O'Hern whose telephone number is (571)272-0496. The examiner can normally be reached on Monday-Thursday, 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brent T. O'Hern/  
Examiner, Art Unit 1794  
November 23, 2009